

JAN 20 1976

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POOR QUALITY PAGES

Honorable Walter F. Mondale
United States Senate

Dear Senator Mondale:

This is in reply to your request of December 10, 1975, for our comments on a December 1, 1975 letter you received from Mr. Steve J. Gadler, Saint Paul, Minnesota. Mr. Gadler expressed concern over the release of some radioactive material from the Prairie Island Nuclear Generating Plant and some other matters relating to this agency.

In order to provide some information on the recent event referenced by Mr. Gadler, we are enclosing a copy of the Northern States Power Company's November 14, 1975 report on this event and a reply sent by NRC to Mr. Peter L. Gove, Executive Director of the Minnesota Pollution Control Agency, in response to his letter of December 1, 1975, which Mr. Gadler enclosed with his letter to you. We believe that these letters adequately describe the details of this event and the letter to Mr. Gove indicates that NRC believes that any possible dose associated with this release to an individual offsite is extremely low.

The unusual event report, which should have been submitted to the Commission by September 9, 1975, was not submitted until November 14. The licensee has indicated that the late reporting resulted from oversight. Because of the minor nature of the reported event and Northern States Power Company's favorable reporting history, we have no reason to believe at this time that the report was intentionally withheld. All aspects of the matter, including the late reporting, will be reviewed during a future inspection. Enforcement action will be taken wherever warranted.

The amount of radioactive releases from Prairie Island is extremely low and it is not increasing at an alarming rate as Mr. Gadler alleges in his letter. Increasing, low-level releases during a plant's initial years of operation are normal. Halogen and particulate radionuclides with half-lives greater than eight days have been released at the following rates:

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<u>Period</u>	<u>Curies Released Annually</u>
1974	0.00045
1975	0.018

These release rates correspond to two percent and ninety-two percent, respectively, of the extremely conservative annual design objective. In order to put these values in perspective we have compared the possible individual annual thyroid doses resulting from the reported releases for 1974 and 1975 with the thyroid dose allowable under NRC regulatory limits. This comparison shows that for 1974, these releases were 0.007% of the Commission regulatory limits and 0.3% for 1975.

We believe from our review of Mr. Gadler's letter that he does not clearly understand the relationship between NRC regulatory limits and "as low as reasonably achievable" design objectives. We would like to clarify this matter by providing a summary discussion of the basis for the NRC regulations and standards for radiation protection. This is enclosure 1 to this letter.

We believe the discussion in enclosure 1 will also provide the basis for our conclusion that the reported radioactive emissions from the Prairie Island plant, are being maintained at very low levels and well within regulatory limits. No deleterious effects to the health and safety of the public have been observed and none are expected as a result of routine emissions from nuclear plants in Minnesota or any other state.

We would like to comment on Mr. Gadler's inference that the former AEC should have taken enforcement action when NSP exceeded a commitment it made to the Minnesota Pollution Control Authority. The basis we utilize for evaluating the operation of a particular facility is the AEC (now NRC) regulations and commitments made to the regulatory authority in support of the license application. The NRC (and the former AEC) enforces its own regulations and does not take official notice of commitments which an NRC licensee might have made to the Minnesota Pollution Control Authority.

Mr. Gadler alleges that the NRC stresses the promotion of nuclear reactors as did the former AEC. The NRC does not have the responsibility for promoting the nuclear industry. The Energy Reorganization Act of 1974, which created the NRC and ERDA, gave the responsibilities for encouraging and developing all forms of energy to ERDA. The responsibilities of NRC were limited to regulating and licensing activities formerly covered under the Atomic Energy Act of 1954, as amended, review of safety and safeguards of such activities and recommending research necessary for the discharge of those functions.

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Honorable Walter F. Mondale

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Certain questions were also raised in Mr. Gadler's letter relating to the use of plutonium at Big Rock Point in Michigan and plans for use of plutonium at Midland, Michigan. The questions asked and our reply to each follows in enclosure 2.

We hope that this information will be helpful in your response to Mr. Gadler.

Sincerely,

William J. Dircks
Assistant Executive Director
for Operations

Enclosures:

1. NRC Regulatory Limits and "As Low As Reasonably Achievable" Design Objectives
2. Plutonium Use at Big Rock Point and Midland
3. Ltr fm S. J. Gadler to Senator Mondale, dtd 12/1/75
4. Ltr fm L. O. Mayer to R. S. Boyd dtd 11/14/75
5. Ltr fm D. L. Ziemann to P. L. Gove dtd 12/24/75

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These release rates correspond to two percent and ninety-four percent, respectively, of the extremely conservative annual design objective. During the three-month period ending in mid-December, the release rate averaged sixty percent of the design objective. We do not expect the annual design objective, which as Mr. Gadler's letter points out is not an operating limit, to be exceeded during 1975.

We conclude from our review of Mr. Gadler's letter that he is somewhat confused about NRC regulatory limits and "as low as reasonably achievable" design objectives. We would like to clarify this matter by providing a summary discussion of the basis for the NRC regulations and standards for radiation protection. This is enclosure 1 to this letter.

We believe the discussion in enclosure 1 will also provide the basis for our conclusion that the reported radioactive emissions from the Prairie Island plant, are being maintained at very low levels and well within regulatory limits. No deleterious effects to the health and safety of the public have been observed or are expected as a result of routine emissions from nuclear plants in Minnesota or any other state.

Certain questions were also raised in Mr. Gadler's letter relating to the use of plutonium at Big Rock Point in Michigan and plans for use of plutonium at Midland, Michigan. The questions asked and our reply to each follows in enclosure 2.

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Enclosure 1

NRC Regulatory Limits and "As Low As Reasonably Achievable" Design Objectives

The official guidance to NRC and other Federal agencies for control of exposures to radiation has been provided through recommendations of the Federal Radiation Council (FRC) and approved by amendment to the Atomic Energy Act of 1954 (420S.C.2021(h)). The functions of the FRC were transferred to the Environmental Protection Agency under Reorganization Plan No. 3 of 1970.

The radiation protection guides of the FRC are generally consistent with the recommendations of the National Council on Radiation Protection and Measurements (NCRP) and the International Commission on Radiological Protection (ICRP). These guides and recommendations form the basis for the Commission's regulation, 10 CFR Part 20, "Standards for Protection Against Radiation". The radiation protection guides established by the FRC for individual members of the public are 500 millirems per year to the total body and bone marrow and 1500 millirems per year to the thyroid and bone.

The FRC radiation protection guides and the recommendations of the NCRP-ICRP give appropriate consideration to the overall requirements of health protection and the beneficial use of radiation and atomic energy. Any biological effects that may occur at the low levels of the FRC guides occur so infrequently that they have not been detected with existing techniques. The FRC, however, has added to its recommendations of the provision that every effort should be made to maintain radiation doses as far below the numerical radiation protection guides as practicable. The NRC subscribes to the general principle that, within established radiation protection guides, radiation exposure should be kept as low as reasonably achievable.

The Commission amended its regulations on June 4, 1975, to give appropriate regulatory effect to the qualitative guidance of the FRC for as low as reasonably achievable radiation doses. The amendment adds an Appendix I to Part 50 of Title 10 of the Code of Federal Regulations. The Appendix contains numerical guides for design objectives and limiting conditions for operation to meet the criterion "as low as reasonably achievable" for radioactive material in light-water-cooled nuclear power reactors.

The exposures to the public living in the immediate vicinity of operating power reactors have been small percentages of Federal radiation protection guides. It is expected that conformance with the Appendix I guides on design objectives and limiting conditions of operation will provide reasonable assurance that annual total-body doses to individuals living near the boundary of a site will be generally less than five percent of average doses from natural background radiation (which is usually about

100 millirems per year) and one percent of Federal Radiation protection guides for individual members of the public.

It should be emphasized that the numerical guides are design objectives. Licensees will be and are permitted flexibility in operation which may temporarily result in releases higher than such numerical guides for design objectives to assure that the public is provided a dependable source of power even under unusual operating conditions. However, these higher releases will be compatible with considerations of health and safety and still within levels that assure that doses to the public are equivalent to small fractions of doses from natural background radiation.

The NRC includes in each license to operate a nuclear power plant a set of "technical specifications" which must be met by the plant. The general contents of technical specifications and their enforcement are described in the NRC regulations, 10 CFR Part 50. The specifications prescribe limits on the release of radioactive effluents. Originally the limits were based on the radiation protection standards of the Commission's regulations, 10 CFR Part 20, which we mentioned earlier.

During the three years the NRC was considering Appendix I, all new licensees of nuclear power plants adopted radioactivity release limits more restrictive than 10 CFR Part 20, which were based on proposed "as low as practicable" design objectives. In the case of Prairie Island, their technical specifications for halogens in gaseous effluents were based on an early proposal which considered the design objective for an individual's thyroid to be 1/6 of the value in the final rule.

Enclosure 2

Plutonium Use at Big Rock Point and Midland

1. Is this a decision the company is allowed to make?

Reply: No. Consumers Power Company did not and cannot use plutonium without review and approval of the NRC. In fact, each licensee or applicant for a license change relating to the reactor core is required to submit details of the reactor core design or design modifications to NRC for review. The review process and approval or disapproval actions are governed by the Code of Federal Regulations, Title 10, Chapter I, Parts 2 and 50.

2. How can they do this without a public hearing?

Reply: They cannot. The Midland case is still in the licensing review stage. An opportunity for public participation is afforded by the independent Atomic Safety and Licensing Board (ASLB). Both the radiological health and safety matters and the environmental matters will be discussed at a location near the proposed site. The use of increased amounts of plutonium at Big Rock Point are subject to completion of a public hearing as discussed in Reply No. 4 below.

3. How can the NRC allow it?

Reply: Our replies No. 1, 2 and 4 should also answer this query.

4. Isn't it a violation of NEPA?

Reply: No. In 1969, Congress passed the National Environmental Policy Act (NEPA). Our regulations implementing NEPA require preparation of draft detailed environmental statements of the impact of our licensing actions; their review by appropriate Federal, state and local agencies; and preparation and submittal to the President's Council on Environmental Quality of Final Environmental Statements. The review process by the Commission's staff includes an evaluation of the potential environmental impact of proposed plants and includes a comparison of the benefits derived against the possible risks to the environment.

The Big Rock Point case involves a request to increase the amount of mixed oxide (plutonium) fuel from amounts of less than 50 kilograms to 150 kilograms. Consumers Power Company has operated safely with test assemblies of plutonium in Big Rock Point since 1969 with AEC approval. In 1972, Consumers requested approval for the increase in the amount of plutonium. The increase was approved by the AEC, but has not been implemented

in the reactor because of an ASLB hearing on the subject. The hearing was temporarily suspended by order of the NRC Commissioners for certain generic^{1/} considerations relating to wide scale use of plutonium. In August, 1975 the Commissioners ordered that NEPA's requirements for Big Rock Point can be met through a discrete environmental review. Therefore, increased use of plutonium at Big Rock Point will only be allowed when a positive decision results from the present hearing process. A necessary premise for any positive decision would be full compliance with all NEPA requirements, as noted above.

^{1/}WASH-1327 August 1974 Draft Generic Environmental Statement
Mixed Oxide Fuel (GESMO).